

Remarks/Arguments:

Claims 1, 4 and 6 have been amended. No new matter is introduced herein. Claims 1-8 are pending.

Claims 1 and 6 have been amended to clarify that the threshold setting unit determines a focus range including a lower limit of an optimum focusing threshold intrinsic to an authorized user and that excludes other users and that a (first) focus deciding unit decides a focus by comparing the focusing degree and the focus range. Claims 4 and 6 have been amended to clarify that the reference diameter setting unit sets a reference iris diameter intrinsic to an authorized user and that excludes other users on the basis of an eye image of the authorized user and that the (second) focus deciding unit decides the focus by comparing the iris diameter and an iris diameter range including an upper limit and a lower limit of an optimum iris diameter. No new matter is introduced herein. Basis for the amendments to claims 1, 4 and 6 can be found, for example, at p. 8, line 10--p. 9, line 25; p. 14, line 21-p. 15, line 24; p. 18, line 19-p. 19, line 11; and Figs. 2, 5 and 7.

Claim 1 has been rejected under 35 U.S.C. § 102(b) as being anticipated by Zhang (US 5,978,494). On page 2 of the Office Action recites that claim 1 is rejected as being anticipated by Zhang. Applicant believes that claim 3 was inadvertently excluded from the rejection on page 2, because claim 3 is discussed on page 3 of the Office Action with respect to Zhang. Accordingly, Applicant addresses the rejection of claims 1 and 3 with respect to Zhang. Claims 1 and 3, however, are patentable over the cited art for the reasons set forth below.

Claim 1, as amended, includes features neither disclosed nor suggested by the cited art, namely:

... a threshold setting unit for determining a focus range including a lower limit of an optimum focusing threshold intrinsic to an authorized user and that excludes other users ...

... a focus deciding unit for deciding a focus by comparing the focusing degree and the focus range ... (Emphasis added)

Zhang discloses, in step 12 of Fig. 1, collecting a set of close-up images (M images) of a subject where each image is taken with a different focus setting (Col. 2, lines 6-14). At step 18, a focus measure between 0 and 1 is computed for each of the M images, where 1 indicates an image that is 100% in focus. At step 18, N images with focus measures from 0.30 to 0.60

are selected, because this range produces "good results in terms of minimizing hamming distances" (Col. 2, lines 30-56). The selected N images are then used to select a master enroll image (Col. 2, line 57-Col. 3, line 11).

Zhang does not disclose or suggest Applicant's claimed features of "a threshold setting unit for determining a focus range including a lower limit of an optimum focusing threshold intrinsic to an authorized user and that excludes other users" (emphasis added). These features are neither disclosed nor suggested by Zhang. Instead, Zhang discloses a focus measure calculation that has a fixed range, regardless of the user. Thus, Zhang does not include all of the features of claim 1. Accordingly, allowance of claim 1 is respectfully requested.

Claim 3 includes all of the features of claim 1 from which it depends. Accordingly, claim 3 is also patentable over the cited art.

Claim 2 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Zhang in view of McHugh et al. (US 6,289,113). This claim, however, includes all of the features of claim 1 from which it depends. McHugh et al. do not make up for the deficiencies of Zhang. Accordingly, claim 2 is also patentable over the cited art.

Claims 4 and 5 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Lee et al. (US 2002/0131622) in view of Hay et al. (US 6,095,989). These claims, however, are patentable over the cited art for the reasons set forth below.

Claim 4, as amended, includes features neither disclosed nor suggested by the cited art, namely:

... the reference diameter setting unit sets the reference iris diameter intrinsic to an authorized user and that excludes other users on the basis of the eye image of the authorized user ...

... the focus deciding unit decides the focus by comparing the iris diameter and an iris diameter range including an upper limit and a lower limit of an optimum iris diameter ... (Emphasis added)

Lee et al. disclose, in Fig. 5, an iris recognition system including video conference camera 401, iris recognition camera 402 for identifying a user and distance detection pointer 403 (paragraphs [0059-0063]). Distance detection pointer 403 is used for projecting light to

the user to measure a distance between the user and the camera (paragraph [0062]). In Fig. 12, Lee et al. disclose optical unit 600 including distance detection pointers 602, 603 that project spot images 602a and 603a onto a user's face. In order to measure the distance between the user and the camera, iris recognition camera 601 acquires the infrared spot images 602a, 603a (paragraphs [0105-0109]).

Lee et al. do not disclose or suggest Applicant's claimed features of "the reference diameter setting unit sets the reference iris diameter intrinsic to an authorized user and that excludes other users on the basis of the eye image of the authorized user" or that "the focus deciding unit decides the focus by comparing the iris diameter and an iris diameter range including an upper limit and a lower limit of an optimum iris diameter" (emphasis added). These features are neither disclosed nor suggested by Lee et al. Thus Lee et al. do not include all of the features of claim 4.

On page 5 of the Office Action, the Examiner asserts that Lee et al. describe a "reference dimension setting unit" for "setting a reference dimension intrinsic to an authorized user" based on paragraph [0113] of Lee et al. Paragraph [0113] of Lee et al., however, relates to distance detection pointers 602, 603 of Fig. 12 and describes that "the distance measurer can calculate the distance (D) between the user and the iris recognition camera by analyzing the characteristics described above, and it is confirmed whether or not the user has entered into the iris recognizable domain, the domain where the camera is focused." Lee et al. are silent on a distance diameter setting unit that sets the reference iris diameter intrinsic to an authorized user and that excludes other users on the basis of the eye image of the authorized user. Applicant respectfully requests that the Examiner either explicitly point out where Lee et al. describes setting the reference iris diameter intrinsic to an authorized user and that excludes other users or withdraw the rejection.

Hay et al. disclose, at boxes 490, 492 of Fig. 15, a search algorithm that is used to locate the left and right eyes of a subject. At boxes 494, 496, a number of parameters are provided as outputs, including an iris diameter, that are provided to eye disease classifier 498. (Col. 47, lines 49-67). Hay et al. do not make up for the deficiencies of Lee et al. because they do not disclose or suggest a reference diameter setting unit that sets the reference iris diameter intrinsic to an authorized user and that excludes other users on the basis of the eye image of an authorized user, as required by claim 4. Accordingly, allowance of claim 4 is respectfully requested.

Claim 5 includes all of the features of claim 4 from which it depends. Accordingly, claim 5 is also patentable over the cited art.

Claims 6-8 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Zhang in view of Lee et al. and Hay et al. These claims, however, are patentable over the cited art for the reasons set forth below.

Claim 6, as amended, includes features neither disclosed nor suggested by the cited art, namely:

... a threshold setting unit for determining a focus range including a lower limit of an optimum focusing threshold intrinsic to an authorized user and that excludes other users ...

... the reference diameter unit sets the reference iris diameter intrinsic to the authorized user and that excludes other users on the basis of the eye image of the authorized user ...

Zhang, Lee et al. and Hay et al. are described above. None of these references, either alone or in combination, disclose or suggest Applicant's claimed features of "a threshold setting unit for determining a focus range including a lower limit of an optimum focusing threshold intrinsic to an authorized user and that excludes other users" or that "the reference diameter unit sets the reference iris diameter intrinsic to the authorized user and that excludes other users on the basis of the eye image of the authorized user" (emphasis added). As discussed above, these features are neither disclosed nor suggested by the cited art. Accordingly, allowance of claim 6 is respectfully requested.

Claims 7 and 8 include all of the features of claim 6 from which they depend. Accordingly, claims 7 and 8 are also patentable over the cited art.

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In view of the amendments and arguments set forth above, the above-identified application is in condition for allowance which action is respectfully requested.

Respectfully submitted,

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